

REDACTED
No. 24-1392

**IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

ALIVECOR, INC.,

Plaintiff-Appellant,

v.

APPLE INC.,

Defendant-Appellee.

On Appeal from the United States District Court
for the Northern District of California
Case No. 4:21-cv-3958 | The Honorable Jeffrey S. White

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CORPORATE DISCLOSURE STATEMENT

Under Federal Rule of Appellate Procedure 26.1, defendant-appellee Apple Inc. discloses that it is a publicly traded company (NASDAQ: AAPL). No parent corporation, publicly held company, or other person or entity owns 10% or more of Apple's stock.

Dated: October 15, 2024

Respectfully submitted,

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INTRODUCTION

The Apple Watch offers powerful capabilities to keep users connected, active, and healthy. Every day, people rely on their Apple Watch to see how fast their heart is beating during exercise. Apple uses algorithms to turn data from an optical sensor on the Watch into the heartrate readings reported in Workout Mode. And as with all software underlying the Watch, Apple often tests and improves that technology.

This case involves a 2018 improvement to Workout Mode. The algorithm Apple had been using to estimate heartrates sometimes reported inaccurate data, or no data at all, and required Apple to code for (and wearers to select) each distinct exercise type. So Apple invested significant time and resources to upgrade the heartrate algorithm. With the new algorithm, Workout Mode indisputably reported more accurate and more frequent heartrate readings during exercise.

That improvement benefited almost all Watch wearers and app developers, who could access and use improved heartrate data for exercise monitoring and app development. But AliveCor—which had been offering its premium subscribers a feature that monitored for atrial fibrillation using the old Workout Mode—contends that its feature no longer

worked as well after the update. So AliveCor sued Apple, claiming that the algorithm switch constituted anticompetitive conduct in violation of Section 2 of the Sherman Act, 15 U.S.C. § 2.

This Court has seen claims like this before. In an unbroken line of decisions, it has held that if an asserted monopolist’s “design change is an improvement, it is necessarily tolerated by the antitrust laws, unless the monopolist abuses or leverages its monopoly power in some other way.” *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 1000 (9th Cir. 2010) (cleaned up). The product-improvement doctrine fosters the innovation that the Sherman Act prioritizes, permitting companies to aggressively compete on the merits free from any obligation to help competitors keep up with technological advancement. And it keeps courts out of the business of policing innovation, or of having to weigh the difficult-to-measure benefits of a product improvement against any detriments to legacy uses.

As the district court correctly concluded in granting summary judgment for Apple on AliveCor’s Section 2 claim, this Court’s product-improvement precedent resolves the case. Apple’s algorithm switch made the heartrate readings reported in Workout Mode more accurate

and consistent, to the benefit of millions of wearers and thousands of app developers. AliveCor doesn't dispute that evidence; instead, it objects that the new algorithm wasn't as good at monitoring for irregular heart rhythms. But nothing in the antitrust laws allows a company with one preferred use of an old version of a product—and a specialized use at that—to scuttle innovation that makes the product better for others. And as the district court explained, any other rule would require it “to analyze, indefinitely, the quality of algorithms that Apple develops for use by each individual third-party developer in order to ensure that the quality never degrades for any purpose”—which would only “restrain competition by discouraging companies from making product improvements that benefit consumers as a whole to the detriment of certain parties who prefer the status quo.” 1-ER-27.

AliveCor also fails to show that Apple undertook associated conduct, distinct from the improvement itself, that “‘constitutes an anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market.’” *Allied Orthopedic*, 592 F.3d at 999. AliveCor contends that the Court should subdivide the product improvement here, treating the introduction of the

new algorithm as the innovation and the removal of access to data from the old algorithm as distinct, associated anticompetitive conduct. But Apple does not offer algorithms, or the raw outputs they produce, to developers or wearers; it offers Workout Mode, which has always been designed to report just one stream of heartrate data. Apple did not separately revoke access to data; it updated its software so Workout Mode would report more accurate data generated by the new algorithm. That developers like AliveCor no longer received data generated by an old algorithm and instead received data from a new one wasn't some separate anticompetitive decision—it was the product improvement itself.

None of AliveCor's associated-conduct arguments overcome that basic, and fatal, fact. AliveCor seizes on an isolated phrase from *Allied Orthopedic*, arguing that the results of product innovation are subject to Section 2 attack unless they are the “necessary consequence” of the innovation, 592 F.3d at 1002. But the asserted incompatibility between AliveCor's feature and the improved Workout Mode *was* the “necessary consequence” of the update to Workout Mode, and this Circuit's case law makes clear that Apple had no affirmative obligation to help AliveCor's feature survive that update.

Ultimately, the story AliveCor tells about Apple’s supposed targeting of competing developers makes no sense. Apple charges nothing for its own “competing” feature, has nothing to gain from shutting down AliveCor’s feature or any other, and in fact only benefits when third-party developers offer an array of useful apps to users of its devices. No case supports a Section 2 claim under those circumstances.

Moreover, even if AliveCor could separately attack the withdrawal of third-party access to the old algorithm’s data, that claim would be governed by the demanding refusal-to-deal standard. Any claim that a supposed monopolist (here, Apple) should have given a competitor (AliveCor) access to intellectual property (heartrate readings generated using the old algorithm) is a refusal-to-deal claim. *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016). Such a claim requires proof that Apple unilaterally terminated a voluntary and profitable course of dealing, involving products sold to existing customers, to sacrifice short-term profits for higher profits from eliminating competition in the long run. *FTC v. Qualcomm Inc.*, 969 F.3d 974, 993-94 (9th Cir. 2020). AliveCor has no evidence capable of proving any, much less all, of those necessary elements.

AliveCor also cannot show antitrust injury, which requires harm to competition, not just harm to one competitor. That injury must take place in the market “where competition is allegedly being restrained.” *Qualcomm*, 969 F.3d at 992 (cleaned up). But while AliveCor alleges harm in a market comprising heart-rhythm-analysis apps that Watch wearers can use, it neither defines nor tries to prove harm in the distinct market where developers are customers of Apple’s platform, and where Apple’s supposedly anticompetitive conduct took place. That disconnect is fatal to AliveCor’s claim and, in any event, AliveCor has no evidence capable of showing injury even in its alleged heart-rhythm-analysis app market.

The Court should affirm the grant of summary judgment to Apple.

STATEMENT OF JURISDICTION

Apple agrees with AliveCor’s statement. OB 6.

STATEMENT OF THE ISSUES

1. Did the district court correctly grant summary judgment in Apple’s favor on AliveCor’s Section 2 claim because Apple’s update to Workout Mode was a lawful product improvement?

2. Alternatively, was summary judgment appropriate because AliveCor’s challenge to the discontinuance of third-party access to data

from the old heartrate algorithm is governed by the refusal-to-deal standard, which AliveCor cannot satisfy?

3. Alternatively, was summary judgment appropriate because AliveCor cannot prove antitrust injury?

STATEMENT OF THE CASE

A. Apple launched its Watch in the competitive marketplace for consumer wearables.

Apple offers popular consumer products that support a variety of software applications. 13-ER-3377-78. Those apps, developed by both Apple and third-party developers, give users countless ways to use their devices. 13-ER-3378. Users have access to Apple's App Store, a virtual storefront offering millions of apps. 13-ER-3378-79.

Apple also offers developers software tools to help them build apps that integrate with Apple's devices. 4-SER-878. Among these are application programming interfaces, or APIs, through which developers can gain access to data from Apple's devices. *Id.*; 8-ER-1920; 13-ER-3379-80. To access Apple's APIs and the data they offer, developers join the Apple Developer Program for \$99 per year and sign a license agreement providing terms and conditions for use of Apple's software. 4-SER-878; 13-ER-

3379. Apple reserves the right to change the APIs it offers to developers. 1-SER-21.

The Apple Watch debuted in 2015. 4-SER-870. Among the Watch's many features—it can text, email, call, check the weather, play music and, of course, tell the time—are a variety of fitness-related tools, including the ability to measure the wearer's heartrate. In that respect, the Watch is part of a crowded market of wearable devices that track heartrates, including smartwatches from Fitbit, Garmin, Tag Heuer, Mont Blanc, Samsung, Xiaomi, Motorola, Suunto, and Withings; implantable loop recorders and patch monitors from iRhythm and BioTelemetry; and chest straps from Fourth Frontier and others. 9-ER-2106 n.349, -2108, -2110-12. Nearly one-third of U.S. consumers own such wearables. 13-ER-3384.

One reason the Apple Watch stands out among that crowd is because of the quality and diversity of health and fitness tools it offers. 4-SER-870-71. Since its debut, the Apple Watch has featured an optical sensor that uses green visible light to detect the wearer's heartrate. *Id.*; 14-ER-3533. And Apple is constantly updating the Watch's operating

system (known as watchOS) to improve its functionality and ensure the Watch is at the forefront of health and fitness tracking. 4-SER-870-71.

The Watch's health- and fitness-related tools are valuable to consumers and developers alike. Wearers who want to track a range of useful metrics when exercising—including heartrate and calories burned—can access Apple's Workout App. 14-ER-3536, -3542; 4-SER-871-72. Apple generates the data used to display those metrics from readings from the Watch, which enters Workout Mode when a wearer opens the Workout App and starts an exercise session. 4-SER-871-72; 8-ER-1916. In parallel, Apple offers developers the Workout Mode API, which (assuming the wearer has consented) allows developers to utilize the same heartrate data displayed to wearers in the Workout App. 14-ER-3536; 4-SER-878. Since the Watch's release, thousands of developers have used the Workout Mode API to access workout data for their apps. 4-SER-879; 9-ER-2047-48.

B. Apple rolled out an improved algorithm for measuring average heartrates.

A core component of the software that supports Workout Mode is the heartrate algorithm, which translates raw measurements from the Watch's optical sensor into estimated heartrate readings. In every

version of watchOS, Workout Mode has been designed to report one average heartrate reading about every five seconds during workouts. 4-SER-872, -881; 8-ER-1915-16. Those readings are displayed in the Workout App. 4-SER-871-72; 14-ER-3536. The heartrate data also are a key driver of the Watch’s “calories burned” count (because a faster heartrate indicates more calories burned). 4-SER-872. These same health- and fitness-related data are available to developers via the Workout Mode API. 14-ER-3536; 4-SER-847-48, -878.

As with all features of its software, Apple has strived to improve the heartrate algorithm. It’s not easy to use a green-light sensor to estimate heartrates, and the algorithm that does that work must account for movement of the body and Watch, tightness of fit, external light sources, sweat, and other variables. 4-SER-873-74.

When the Watch first launched, Workout Mode estimated average heartrates using an algorithm known as the Heart Rate Path Optimizer, or HRPO. 8-ER-1916. But over time, both consumer comments (e.g., the [REDACTED]) and Apple’s testing (which showed that the heartrate reported in Workout Mode [REDACTED]) indicated that HRPO sometimes

delivered inaccurate readings during exercise. 13-ER-3406. And although HRPO was designed to report a heartrate reading about every five seconds, HRPO would sometimes fail to successfully report any reading, leading to gaps in the data. 4-SER-876-77; *see* 2-SER-188, -192-94, -266, -292-96.

HRPO had other limitations, too. For HRPO to be optimized, Apple's engineers had to separately code HRPO for each type of exercise ("outdoor run," "pool swim," "strength training," etc.). 4-SER-874-75. Maintaining and improving that exercise-specific coding, and building it out to cover more exercise types, imposed substantial development costs on Apple. *Id.*; 14-ER-3546; 16-ER-4142-43. And it was inconvenient for wearers, who had to select a specific exercise type and could not shift fluidly from one type to another (such as taking a warm-up run before lifting weights). 4-SER-874; 2-SER-288.

Recognizing HRPO's limitations, Apple set out to improve Workout Mode. 4-SER-874-77; 13-ER-3412; 2-SER-178. Between [REDACTED]

[REDACTED]
[REDACTED] into developing a machine-learning algorithm that could produce more accurate

heartrate readings. 4-SER-874-78; 8-ER-1918-19; 14-ER-3547, -3552-61. The result was the new Heart Rate Neural Network algorithm, or HRNN, released in September 2018 as part of watchOS 5. 4-SER-878.

Like HRPO, HRNN is designed to produce an average heartrate reading about every five seconds. 4-SER-876. But HRNN reports heartrate measurements more consistently than HRPO, with fewer gaps in the data. 4-SER-876-77. HRNN's heartrate readings are also more accurate. *Id.*; 2-SER-188, -192-94; -266, -292-96. Apple's "massive corpus of testing" across a wide range of exercise activities (including indoor and outdoor walking and running, indoor and outdoor cycling, rowing, elliptical, swimming, and high-intensity interval training) showed that the new algorithm was "substantially superior for workout heart rate tracking" and "improved the coverage and accuracy of Workout Mode heart rate detection." 8-ER-1918-19; 14-ER-3557-61.

HRNN improved Workout Mode in additional ways. Unlike HRPO, HRNN could deliver accurate heartrate readings even if a Watch wearer had not selected a particular exercise type. 4-SER-876; 8-ER-1919; 14-ER-3547. Apple engineers also no longer had to develop and refine coding for distinct types of exercise. 8-ER-1918; 14-ER-3547.

Workout Mode has always been designed to report only one heartrate measurement for any given interval; it lacks any architecture to report multiple heartrate readings side by side. 4-SER-881. Accordingly, upgrading Workout Mode to report improved heartrate readings derived from the new HRNN algorithm necessarily meant that the less-accurate HRPO readings could not be reported for the same time intervals, at least absent reconstruction of Workout Mode's basic architecture. And Apple had no reason to undertake the effort and expense of building new architecture from new source code, either to display two divergent readings (from both HRPO and HRNN) simultaneously or to deploy a switch for users to toggle between the alternatives. 4-SER-881-82; 8-ER-1924-25. Doing so would have meant giving users and developers data that Apple knew to be generally less accurate; it also would have risked producing confusion among wearers and developers, and would have required Apple to spend considerable resources developing an additional tool to help users determine which set of data was more accurate from moment to moment. 4-SER-881-83; 8-ER-1922-23. Changing Workout Mode so that two sets of heartrate data would be stored and displayed on

an ongoing basis would also drain the Watch's processing and memory resources. 4-SER-854, -883; 17-ER-4471-72; 9-ER-2054.

To give Watch wearers and developers HRNN's more accurate data, Apple made HRNN the primary heartrate detection algorithm. 4-SER-876-77, -878-79, -881; 8-ER-1918-19; 14-ER-3547, -3552-61. At first, Apple didn't entirely remove HRPO from watchOS. Apple's testing showed that HRPO sometimes produced an initial reading faster than the early versions of HRNN. 4-SER-877; 14-ER-3555. To ensure users received prompt readings, therefore, Workout Mode would store and report a heartrate reading from HRPO if (and only if) HRPO produced a first reading faster than HRNN. 4-SER-877; 14-ER-3555. Workout Mode would then report only the HRNN heartrate as soon as HRNN reported its first reading or after the first minute of a workout, whichever came first. 4-SER-877; 14-ER-3555. After the first HRNN reading or the first minute, HRPO's readings would be neither stored nor used to report heartrates in Workout Mode, which conserved the Watch's processing and memory resources. 4-SER-877; 14-ER-3555.

The update to Workout Mode thus mostly sidelined HRPO. For a time, Apple separately used HRPO for High Heart Rate Notification,

8-ER-1973-74, a distinct feature not at issue here. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

Id.; 14-ER-3537-38. [REDACTED]

[REDACTED]

[REDACTED]. 8-ER-1973-74; *see* 4-SER-878.

Once Apple had improved HRNN so that the new algorithm produced a faster initial heartrate reading, Apple had no further need for HRPO, which was then removed from Workout Mode (and eventually from watchOS altogether). 4-SER-877-78; 14-ER-3555-56, -3696-97. After that change, Workout Mode’s single stream of heartrate data came entirely from HRNN.

HRNN achieved Apple’s goal of giving Watch users more accurate heartrate data in Workout Mode. 13-ER-3412-13. The improved heartrate data were also given to developers via the Workout Mode API. At the time of the algorithm switch, [REDACTED]—about [REDACTED] of the top health and fitness apps on the App Store—were approved to use the

Workout Mode API (examples included Nike Run Club, Peloton, Strava, and MapMyRun). 9-ER-2047-48. In the years following HRNN's implementation, the number of apps approved to use the Workout Mode API skyrocketed to [REDACTED]. 9-ER-2045.

Soon after Apple upgraded Workout Mode, it introduced a number of additional heart-related features, including an FDA-cleared heartrate-monitoring feature called Irregular Rhythm Notification. 4-SER-870-71; 14-ER-3571. IRN uses tachograms—a plot of time detailing every heart-beat—to detect whether the wearer's heart rhythm is irregular. 14-ER-3538-41; 21-ER-5526-27, -5529-30. Tachogram data used by IRN are distinct from the HRNN-generated data; the latter estimate *heartrates*, meaning the average number of heartbeats per minute, whereas the former measure heart *rhythms*, meaning when each heartbeat occurs in relation to others. 14-ER-3508-09; 4-SER-870-71. If wearers consent, developers also can gain access to tachogram data displayed in the IRN feature through the Tachogram API. 4-SER-878.

C. AliveCor offered and then withdrew a heartrate-monitoring software feature.

AliveCor, a medical-device company, developed Kardia, an app compatible with the Apple Watch. 21-ER-5519-20. Kardia is free, but

AliveCor also offers a premium Kardia subscription for \$9.99 per month or \$99 per year. 13-ER-3374-75. AliveCor does not pay any commissions to Apple from its subscription sales. 9-ER-2051.

In November 2017, AliveCor released SmartRhythm, a software feature accessible only to premium Kardia subscribers. 7-SER-1383-86; 13-ER-3374-75; 21-ER-5520. AliveCor designed SmartRhythm when Workout Mode still used the HRPO algorithm (the upgraded Workout Mode using HRNN did not debut until September 2018). 9-ER-2042; 13-ER-3377. SmartRhythm was intended to detect irregular heart rhythms, particularly atrial fibrillation (AFib), and repurposed Workout Mode's heartrate readings to that end. 13-ER-3375; 21-ER-5566. As its name suggests, Workout Mode was designed to operate during exercise. 4-SER-871-73; *see* 8-ER-1915-16; 9-ER-2047; 14-ER-3542. But because AliveCor wanted to continuously monitor for AFib, SmartRhythm required the Watch to run Workout Mode constantly. 9-ER-2047; 13-ER-3420; 21-ER-5520-21.

After Apple released watchOS 5 in September 2018 with the improved Workout Mode using HRNN, AliveCor supposedly saw changes in SmartRhythm's ability to detect AFib. 21-ER-5522-23. AliveCor

withdrew SmartRhythm from Kardia in mid-2019 (but continued to offer the \$99 premium subscription). 9-ER-2060.

D. AliveCor sued Apple, and the district court granted summary judgment for Apple.

AliveCor sued Apple, claiming that the replacement of HRPO with HRNN constituted anticompetitive conduct in violation of Section 2 of the Sherman Act, 15 U.S.C. § 2. 1-SER-139-44. AliveCor also sought broad injunctive relief under California’s Unfair Competition Law (UCL), Cal. Bus. & Prof. Code § 17200, asking the court to order Apple to modify its Workout Mode API so that AliveCor could again access HRPO data. 1-SER-144-45. Below, AliveCor conceded that Apple’s algorithm switch is governed “by *Allied Orthopedic Appliances Inc. v. Tyco Health Care Group LP*, 592 F.3d 991 (9th Cir. 2010).” 1-SER-164.

The parties each sought summary judgment. In addition to arguing that its upgrade to Workout Mode was lawful under *Allied Orthopedic*, Apple argued that summary judgment was also required on the Section 2 claim because AliveCor could not prove that Apple violated any duty to deal in withdrawing the old HRPO algorithm, 12-ER-3121-25, and because AliveCor hadn’t established the requisite injury to competition, 12-ER-3134-37. Apple also sought summary judgment on AliveCor’s

UCL claim because the relief it sought—a decree ordering Apple to reinstall HRPO and reengineer Workout Mode for AliveCor’s benefit—would be unadministrable. 18-ER-3137-39.

The district court granted summary judgment in Apple’s favor on the Section 2 claim, concluding that the algorithm switch was a lawful product improvement under *Allied Orthopedic* and related decisions. 7-ER-1479-506. The court determined that there was undisputed evidence that HRNN improved the accuracy of heartrate data and reported heartrates more frequently during exercise than HRPO. 7-ER-1500-01. As the court noted, HRNN’s introduction was designed to ensure that wearers no longer had “to select an exercise type” and Apple no longer had to bear “corresponding costs in developing and maintaining exercise-specific programming.” 7-ER-1500. Accordingly, there was no genuine dispute that HRNN made Workout Mode better for exercise, its intended use. 7-ER-1500-01. The district court declined AliveCor’s invitation to focus solely on whether HRNN made Workout Mode better or worse for detecting AFib, explaining that companies have “the right to implement a product change that is detrimental for some purposes so long as it is an

improvement for consumers in some other way.” 7-ER-1501 (citing *Allied Orthopedic*, 592 F.3d at 1002).

The district court also rejected AliveCor’s argument that the fact that third-party developers could no longer see HRPO data through the Workout Mode API was “associated conduct” by Apple that “effectively forc[ed] consumers to adopt Apple’s IRN product.” 7-ER-1501-02. As the court observed, the “logical conclusion” of AliveCor’s theory was that Apple would have to indefinitely “maintain any algorithm used by a single developer on watchOS” so long as its removal would “disrupt third-party apps,” no matter the costs to Apple of maintaining and updating a defunct algorithm. 7-ER-1502. Under *Allied Orthopedic*, an alleged “monopolist has no duty to help its competitors survive or expand when introducing an improved product design,’ even if the monopolist could have made alternate design choices that would be compatible with a competitor’s products.” 7-ER-1502 (quoting 592 F.3d at 1002). The court therefore concluded that “Apple was under no antitrust obligation to make its improvements to Workout Mode compatible with AliveCor’s app, such as by designing a mechanism to enable AliveCor or other competitors to access HRPO data” on an ongoing basis. 7-ER-1502-03.

The district court also granted Apple summary judgment on AliveCor’s UCL claim, reasoning that AliveCor’s requested relief would require the court to “micromanage the algorithms Apple maintains on watchOS by ordering Apple to modify its Workout Mode API to reintegrate HRPO,” such as by creating a “toggle for developers to choose between HRPO and HRNN values in Workout Mode.” 7-ER-1504. Such intrusive relief was outside the court’s “purview,” lacked “practical limits,” and was therefore “unadministrable.” *Id.*

AliveCor appealed, challenging only the ruling on its Section 2 claim.

SUMMARY OF ARGUMENT

I. The district court correctly granted summary judgment for Apple on AliveCor’s Section 2 claim because the algorithm switch AliveCor challenges was a lawful product improvement under this Court’s decisions culminating in *Allied Orthopedic Appliances Inc. v. Tyco Health Care Group LP*, 592 F.3d 991 (9th Cir. 2010).

A. When a company improves a product it offers, “that product improvement by itself does not violate Section 2, even if it is performed by a monopolist and harms competitors as a result.” *Allied Orthopedic*, 592 F.3d at 999-1000. Here, undisputed evidence shows that Apple’s update

to Workout Mode “provided some new benefit,” *id.* at 1000, because it improved the accuracy and frequency of heartrate data reported to both Watch wearers and third-party developers. Accordingly, any harm to AliveCor’s legacy uses of the previous version of Workout Mode “is ‘necessarily tolerated by the antitrust laws.’” *Id.*

AliveCor and its amici protest that the new algorithm wasn’t as good for one specialized purpose—measuring AFib. But Circuit precedent precludes courts from balancing the benefits of a product improvement against harms to legacy uses resulting from the innovation. *Allied Orthopedic*, 592 F.3d at 1000. Nor can the courts, as a matter of Section 2 or basic principles of judicial administration, require innovators to take on additional costs to continue offering competitors old versions of their improved products. *Id.* at 1002. And AliveCor’s effort to conjure a dispute about Apple’s intent to harm AliveCor’s SmartRhythm feature is both legally irrelevant and factually unfounded.

B. AliveCor has not produced any evidence that Apple engaged in “some associated conduct,” distinct from the “product improvement by itself,” that violates Section 2. *Allied Orthopedic*, 592 F.3d at 999-1002. AliveCor says that it can challenge Apple’s “gating off” and “removal” of

the old algorithm separately from its introduction of the new algorithm. But the switch from the old algorithm to the new one for the single stream of heartrate readings reported in Workout Mode was the product improvement itself, not “associated” conduct. Apple would have had to change Workout Mode’s basic architecture to give developers and wearers access to more than one set of heartrate data at once—a change that would come with significant costs. Moreover, allowing Section 2 plaintiffs to artificially subdivide product improvements as AliveCor urges would render the doctrine toothless, thereby suppressing innovation and vigorous competition.

AliveCor also has no evidence of any technological “forcing” (OB 32) that could justify Section 2 liability. It hasn’t shown that Apple engaged in any distinct anticompetitive conduct separate from the improvement to Workout Mode itself. Nor did Apple have anything to profit from a forced switch of the sort AliveCor claims—Apple charges nothing for the heart-rhythm-analysis feature it offers to Watch wearers, for instance, and offers developers the ability to use the same data Apple uses for that feature.

II. Affirmance is also warranted on an alternative ground: even if AliveCor could challenge Apple’s discontinuance of third-party access to

data produced by the old algorithm, that claim would be governed by refusal-to-deal principles that AliveCor cannot satisfy.

A. AliveCor contends the district court should have applied rule-of-reason analysis to Apple’s “gating off” and “removal” of the old algorithm. But in substance, the theory AliveCor advances—that Apple improperly withheld proprietary technical data from rivals—is a refusal-to-deal claim. Refusal-to-deal claims are disfavored because they reduce the competitive incentives central to antitrust law and contradict the principle that consumer welfare is enhanced when competitors compete rather than cooperate. Accordingly, such claims are governed by a demanding three-part test under *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985). *See FTC v. Qualcomm Inc.*, 969 F.3d 974, 993-94 (9th Cir. 2020). AliveCor cannot use semantic framing of its claims to avoid “the hard road of refusal to deal doctrine.” *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1078 (10th Cir. 2013) (Gorsuch, J.); *accord Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016).

B. Under the correct framework, AliveCor’s refusal-to-deal claim fails to satisfy any of the *Aspen Skiing* requirements. Apple’s algorithm switch did not terminate any profitable course of dealing; Apple

continues to give AliveCor full access to APIs on the same terms as all developers. Nor did Apple sacrifice short-term profits to recoup higher profits from excluding competition in the long run—indeed, the IRN feature that AliveCor claims benefited from its withdrawal of SmartRhythm is free. And AliveCor cannot show that Apple has withdrawn or refused to offer any “products that [Apple] already sells in the existing market to other similarly situated customers.” *Qualcomm*, 969 F.3d at 994. Ultimately, AliveCor seeks compelled access to raw data apart from Apple’s generally available APIs—something no developer has *ever* received. *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410 (2004).

III. Affirmance is also warranted for the additional independent reason that AliveCor cannot prove antitrust injury.

Section 2 requires harm to *competition*, not just to one competitor, and that harm must occur in the market where competition is supposedly restrained. *Qualcomm*, 969 F.3d at 992, 996. AliveCor claims injury in a market for heart-rhythm-analysis apps offered to Watch wearers—yet it neither defines nor tries to prove injury in the distinct market in which the asserted anticompetitive conduct took place, where app developers are

customers of Apple’s platform. That mismatch is fatal to AliveCor’s Section 2 claim. And in any event, AliveCor can’t show injury even in the market for heart-rhythm-analysis apps, where prices have been slashed and output is booming. Consumers may have flocked to Apple’s free feature, but that isn’t proof of harm *to the market itself*, as Section 2 requires.

STANDARD OF REVIEW

This Court reviews the district court’s decision on cross-motions for summary judgment de novo. *JL Beverage Co. v. Jim Beam Brands Co.*, 828 F.3d 1098, 1104 (9th Cir. 2016). Summary judgment is appropriate unless the parties genuinely dispute a fact that “might affect the outcome of the suit under the governing law.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). This Court can affirm the judgment “‘on any ground supported by the record even if it differs from the rationale of the district court.’” *Opara v. Yellen*, 57 F.4th 709, 721 (9th Cir. 2023).

ARGUMENT

I. The district court correctly determined that Apple’s switch to a new algorithm was a lawful product improvement.

Innovation is the “essence of competitive conduct,” not a basis for antitrust liability. *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 542 (9th Cir. 1983). Accordingly, “a design change that

improves a product by providing a new benefit to consumers does not violate Section 2 absent some associated anticompetitive conduct.” *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998-99 (9th Cir. 2010). Apple’s enhancement to Workout Mode’s heartrate algorithm fits well within the product-improvement doctrine. The algorithm change was a boon both for Watch wearers, who could more accurately track their heartrate and calories when exercising, and for developers, who could use the more accurate data through the Workout Mode API. As the district court put it, that leaves “no genuine dispute that the replacement of HRPO with HRNN was a product improvement” and that AliveCor cannot recover under Section 2. 7-ER-1500.

AliveCor offers no way around that ruling. It doesn’t matter that the algorithm switch was supposedly worse for AliveCor’s purpose, because it was indisputably an improvement for other purposes. The product-improvement doctrine does not permit courts to perform the type of balancing between potential beneficial uses that AliveCor urges. Nor can AliveCor show any “associated anticompetitive conduct.” *Allied Orthopedic*, 592 F.3d at 999. Apple’s “gating off” and “removal” of data from the old algorithm (OB 38, 46) were part and parcel of the product improvement

itself, and Apple didn't engage in any distinct predatory or exclusionary conduct that could support Section 2 liability. AliveCor's arguments to the contrary contradict decades of this Court's case law and the record.

A. Product improvements cannot violate Section 2 absent proof of distinct “associated conduct” that constitutes an anticompetitive abuse.

“Section 2 of the Sherman Act proscribes ‘monopolization’; it does not render unlawful all monopolies.” *Foremost*, 703 F.2d at 543 (citing 15 U.S.C. § 2). Even an alleged monopolist is permitted, “indeed encouraged[,] to compete aggressively on the merits, and any success it may achieve solely through ‘the process of invention and innovation’ is necessarily tolerated by the antitrust laws.” *Id.* at 544-45 (quoting *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 281 (2d Cir. 1979)); see also *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966) (no Section 2 liability based on “growth or development as a consequence of a superior product”). So when a company improves a product it offers, “that product improvement by itself does not violate Section 2, even if it is performed by a monopolist and harms competitors as a result.” *Allied Orthopedic*, 592 F.3d at 999-1000.

This Court has recognized that “uncontroversial proposition,” *Allied Orthopedic*, 592 F.3d at 999, in many decisions over the years. *See id.* at 998-1002; *Foremost*, 703 F.2d at 544-46; *Cal. Comput. Prods., Inc. v. IBM Corp. (CalComp)*, 613 F.2d 727, 744 (9th Cir. 1979); *see also Oahu Gas Serv., Inc. v. Pac. Res., Inc.*, 838 F.2d 360, 369 (9th Cir. 1988). Three guiding principles have emerged.

First, when a company improves its product, it is “of no legal import” if the improvement harms competitors. *Foremost*, 703 F.2d at 545. *Foremost*, for instance, involved Section 2 claims by a competing photo-finishing company against Kodak, which had released a new camera using new film. *Id.* at 537, 543. *Foremost* objected that Kodak’s camera and film were incompatible with *Foremost*’s existing technology, forcing it to buy new materials to service photos from the camera. *Id.* But this Court held that Kodak’s challenged conduct was “not anticompetitive,” *id.* at 543, because Kodak’s new products represented “innovations,” *id.* at 537, 545—and “particularly in . . . technologically advancing industries,” such innovation is “the essence of competitive conduct,” *id.* at 542. Any resulting “technological incompatibilities” with *Foremost*’s old

technology were simply the result of the competition that Section 2 protects. *Id.* at 542, 545-46.

Relatedly, a monopolist’s right to improve its products doesn’t carry any “duty to help [competitors] survive or expand” or obligation to “constrict[] . . . product development” to protect existing uses. *CalComp*, 613 F.2d at 744. *CalComp*, for instance, involved Section 2 claims based on design changes that IBM made to some of its central-processing units and peripheral devices. *Id.* at 739. A competitor that made peripheral devices previously compatible with IBM’s CPUs sued, complaining that IBM’s changes made it difficult or impossible for the competitor to continue offering those devices. *Id.* at 743-44. This Court rejected that claim, affirming a directed verdict in IBM’s favor. *Id.* at 744-46. IBM’s changes yielded a “performance improvement” by facilitating “the integration of control and memory functions.” *Id.* at 744. And given that improvement to the products it offered, IBM “was under no duty to help CalComp or other peripheral equipment manufacturers survive or expand” following the changes. *Id.*

Second, “[t]here is no room in th[e] analysis for balancing the benefits or worth of a product improvement against its anticompetitive

effects.” *Allied Orthopedic*, 592 F.3d at 1000. That sort of judicial second-guessing of product innovation would contravene “the very purpose of the antitrust laws, which is, after all, to foster and ensure competition on the merits.” *Id.* And inviting courts to superintend innovation “is not just unwise, it is unadministrable”: there are “no criteria that courts can use to calculate the ‘right’ amount of innovation” or “weigh as-yet-unknown benefits against current competitive injuries.” *Id.*

In *Allied Orthopedic*, for instance, healthcare providers challenged Tyco’s introduction of a new pulse oximetry system that was “incompatible with generic sensors” and thus harmed the generic manufacturers. 592 F.3d at 994, 1000. But the new system was an improvement because it “reduce[d] costs for consumers,” “allow[ed] new functions,” and “facilitate[d] the introduction” of further technologies in the future. *Id.* at 1001. Because the new design “provided *some* new benefit to consumers,” the Court did not balance the improvement’s benefits against its alleged anticompetitive effects. *Id.* at 1000-02 (emphasis added); *see, e.g., MedioStream, Inc. v. Microsoft Corp.*, 869 F. Supp. 2d 1095, 1107 (N.D. Cal. 2012) (a product improvement falls within *Allied Orthopedic* so long as it delivers “*a* new benefit” (emphasis added)).

Third, in suing under Section 2, the plaintiff must identify “‘*not* the product introduction itself, but some associated conduct’” that separately “constitutes an anticompetitive abuse or leverage of monopoly power” or a “predatory or exclusionary means” of monopolization. *Foremost*, 703 F.2d at 545-46 (emphasis added); *accord Allied Orthopedic*, 592 F.3d at 999-1000 (no liability unless monopolist abuses position “‘in some other way’”); *see also Crowder v. LinkedIn Corp.*, 2023 WL 2405335, at *6-7 (N.D. Cal. Mar. 8, 2023) (no Section 2 liability without proof that a product change “was not an improvement to [the defendant’s] services or that there was an abuse of monopoly power ‘in some other way’”). In *Allied Orthopedic*, for example, the defendant’s new and improved pulse oximetry monitors were incompatible with the old sensor technology that competitors had used, but that incompatibility did not amount to a distinct abuse of market power to force adoption of the new system. 592 F.3d at 1002. Instead, because “the product improvement at issue in th[e] case, not some associated conduct by [the defendant], caused the incompatibility,” the plaintiffs had no viable Section 2 claim. *Id.*

B. The undisputed record establishes that Apple’s switch from HRPO to HRNN improved Workout Mode.

The record here shows that Apple’s change to the heartrate algorithm underlying Workout Mode was a product improvement. The district court therefore “properly granted summary judgment on the Section 2 claim.” *Allied Orthopedic*, 592 F.3d at 1002-03.

Understanding the improvement requires asking what Workout Mode does. Workout Mode turns the Watch into a fitness-tracking device. It allows wearers, through the Workout App, to see valuable information to help guide their workouts. One data point is an estimate, every five seconds or so, of the wearer’s heartrate. 4-SER-871-72; 8-ER-1915-16; 14-ER-3536, -3542. Keeping tabs on heartrate is a core part of modern exercise, because the ideal heartrate range varies depending on one’s exercise goals. 8-ER-1923. And accurate heartrate measurements are vital to track the calories burned in a workout, another crucial fitness measure. 4-SER-872. Through the Workout Mode API (when consumers consent), Apple offers the same useful data consumers see in the Workout App to third-party developers, who can build their own health- and fitness-related apps leveraging that data.

During the period HRPO was used to estimate heartrates, consumer comments and internal testing revealed that Workout Mode would sometimes report inaccurate readings when Watch wearers were exercising. 13-ER-3406; 14-ER-3546. And to get good results, wearers had to specify what type of exercise they were performing, which prevented them from transitioning seamlessly from one workout to another. 4-SER-874-75. That brought headaches on the development side, too, because Apple had to create and maintain distinct coding for each exercise type. *Id.*; 14-ER-3546; 16-ER-4142-43.

Against that backdrop, the record reveals (in the district court's words) "no genuine dispute that the replacement of HRPO with HRNN was a product improvement." 7-ER-1500. Extensive testing involving various exercise types, "such as indoor walking, outdoor walking, indoor running, outdoor running, indoor cycling, outdoor cycling rowing, elliptical, swimming, and high-intensity interval training," revealed that HRNN reported more accurate heartrate data. 14-ER-3557-61. HRNN also reported heartrate measurements more consistently than HRPO, with fewer gaps in the data. 4-SER-876-77. Overall, HRNN was "substantially superior for workout heart rate tracking," improving both "the

coverage and accuracy of Workout Mode heart rate detection.” 8-ER-1918-19; 14-ER-3561.

The algorithm update thus improved Workout Mode. More accurate and consistent heartrate readings were available to wearers through the Workout App. 13-ER-3412-13. And with HRNN (unlike HRPO), wearers didn’t have to select ahead of time which type of exercise they would perform. 4-SER-875-76. Developers also could access the Workout Mode API’s improved data to offer wearers more finely tuned apps. The effect was striking: the number of apps approved to use data from the Workout Mode API [REDACTED] following Apple’s introduction of HRNN. 9-ER-2045, -2047-48.

AliveCor has “all but concede[d]” that HRNN is “better than HRPO for exercise purposes.” 7-ER-1500. But below and on appeal, it has raised three arguments to dispute that the algorithm switch qualifies as a product improvement. None has merit.

First, AliveCor objects that the new algorithm wasn’t as good at “detect[ing] [AFib] in real-time.” *E.g.*, OB 1-2. AliveCor’s amici tell the same story, complaining that HRNN “is not an improvement *for medical monitoring purposes*.” Physicians Br. 11. As they see it, so long as they

can identify one respect in which the change was not an improvement, it doesn't matter that the "HRNN algorithm was an improvement over the HRPO algorithm *for exercise purposes*." *Id.* at 10. And, they continue, either the Court or a factfinder should weigh one use against another and decide which one the antitrust laws value more. OB 48-50.

This Court's precedent forecloses that argument. A product change merely has to offer "*a new benefit to consumers*." *Allied Orthopedic*, 592 F.3d at 998 (emphasis added); *accord id.* at 1000 ("*some new benefit*" (emphasis added)). And there is "no room in th[e] analysis for balancing the benefits or worth of a product improvement against its [allegedly] anti-competitive effects." *Id.* at 1000. For one thing, courts couldn't conduct that balancing with any confidence, as "seemingly minor technological improvement today can lead to much greater advances in the future." *Id.* For another, such judicial interference would stymie the innovation that the antitrust laws protect. *Id.* Ultimately, this Court has already given the answer to AliveCor's protests that Apple should have prioritized AFib detection over exercise-related tracking: "the ultimate worth of [that change] can be adequately judged only by the market itself." *Id.*; *accord, e.g., Berkey Photo*, 603 F.2d at 286-87.

None of this Court’s decisions contains anything like the analysis AliveCor urges here. In *CalComp*, for instance, the Court did not ask what tasks CalComp’s peripheral devices performed or how the benefits of IBM’s changes compared to any harms from the obsolescence of those devices; it merely noted that the changes improved some aspects of IBM’s products and thus were lawful under Section 2. 613 F.2d at 743-44. Likewise, in *Foremost*, the Court didn’t ask if there was anything worth saving in Foremost’s legacy photofinishing processes; rather, it rejected any duty on Kodak’s part to ensure survival of the previous technology. 703 F.2d at 545-46. And in *Allied Orthopedic*, it sufficed that Tyco’s new system “provided some new benefit to consumers,” even as it eliminated the interoperability with the plaintiff’s products. 592 F.3d at 1000. Each case refutes AliveCor’s contention that the Court should ignore the undisputed ways that the algorithm change improved Workout Mode *for its intended purpose* (exercise tracking), and instead focus on the specialized legacy use AliveCor prefers.

In sum: because the algorithm switch offered real benefits to Watch wearers and developers, Apple was under no obligation to “‘constrict[] its

product development so as to facilitate’” the ongoing performance of third-party features like SmartRhythm. *Foremost*, 703 F.2d at 545.

Second, AliveCor tries to gin up a dispute about whether Apple intended to harm AliveCor using the algorithm improvement. OB 36-38. The district court correctly rejected that argument, 7-ER-1501, as should this Court.

As a legal matter, “[s]tatements of an innovator’s intent to harm a competitor through genuine product improvement are insufficient by themselves to create a jury question under Section 2.” *Allied Orthopedic*, 592 F.3d at 1001. Evidence of intent is relevant only if “it shows that the innovator knew all along that the new design was no better than the old design”—but here, all evidence indicates that Apple’s algorithm switch was a “legitimate product improvement.” *Id.* So even if Apple had known or intended that the improvement would “have the effect of harming or even destroying competitors,” that would not allow AliveCor to rescue its Section 2 claim. *Id.* To the extent AliveCor urges Section 2 liability based on undisputed product improvements pursued for “pretextual” purposes (OB 37), that theory is foreclosed by *Allied Orthopedic*.

In any event, the record lends no support to AliveCor’s mischaracterizations of Apple’s intent. The sparse evidence AliveCor cites (*see* OB 16-17) amounts to just a few emails reflecting the views of individual Apple employees. And even those comments do not indicate an intent to harm any developers. Rather, they recognize that [REDACTED]

[REDACTED]

[REDACTED]. *E.g.*, 13-ER-3338. Awareness of the possible consequences of a product improvement does not equate to malicious intent. Nor does [REDACTED]

[REDACTED] (*e.g.*, 13-ER-3330) supply evidence of an intent to interfere with similar features offered by developers. And while AliveCor makes much of employees’ questions about whether [REDACTED]

[REDACTED] (*e.g.*, 13-ER-3164, -3338), those too involve the consequences of, rather than the motivation for, the change.

Ultimately, AliveCor’s argument about intent makes no rational sense. Apple had nothing to gain from shutting down SmartRhythm or any other heart-rhythm-analysis feature: Apple charges nothing for its “competing” IRN feature (OB 16-17), and Apple *benefits* when third-party

developers offer a wider array of features to users of its devices. 9-ER-2044-46. “Antitrust claims must make common sense,” *Adaptive Power Sols., LLC v. Hughes Missile Sys. Co.*, 141 F.3d 947, 952 (9th Cir. 1992); AliveCor’s does not.

Third, AliveCor contended below that HRNN wasn’t an improvement because HRPO was initially faster than HRNN at reporting a first reading, so Workout Mode for a time would sometimes show data from HRPO. 4-SER-877; 14-ER-3555; *see* 7-ER-1499. But AliveCor hasn’t revived that argument here, and for good reason. As the district court explained, “Workout Mode always used HRNN and not HRPO after [an] initial [60-second] interval or after the first HRNN value, whichever occurred first.” 7-ER-1499. “The only reasonable inference” to be “draw[n] from this hybrid design choice is that HRPO sometimes produced a high-confidence value faster than HRNN when HRNN was first introduced”—*not* that HRPO was generally “better than HRNN for use during exercise.” *Id.* Ultimately, even that hybrid choice gave way, as Apple improved HRNN so that it produced faster initial readings and removed HRPO from watchOS altogether. 4-SER-877-78; 14-ER-3555-56, -3696-97. All the evidence in this respect indicates that Apple was consistently

interested in ensuring that Workout Mode featured the most accurate and frequent heartrate data for the benefit of both Watch wearers and third-party developers.

* * *

Because the algorithmic improvements to Workout Mode “provided some new benefit to consumers,” they “constituted an improvement” under *Allied Orthopedic*. 592 F.3d at 1000. That change “is ‘necessarily tolerated by the antitrust laws.’” *Id.* Giving companies like Apple space to improve the products they offer consumers and developers comports with the “‘very purpose of the antitrust laws, which is, after all, to foster and ensure competition on the merits.’” *Id.*; see 7-ER-1502.

C. AliveCor’s associated-conduct arguments are unavailing.

The bulk of AliveCor’s arguments against the summary judgment ruling would require the Court to subdivide the product improvement here into discrete parts. Specifically, AliveCor contends that Apple’s “gating off” and “removal” of data from the old algorithm constitute “associated” anticompetitive conduct, distinct from the launch of the new algorithm, that should have been assessed free of the principles this Court has recognized in *Allied Orthopedic* and similar cases. OB 38, 40.

That theory is untenable: those steps are part and parcel of the improvement Apple made to Workout Mode and the related API. Allowing litigants to subdivide product improvements as AliveCor proposes would spell the end of the doctrine altogether. And AliveCor hasn't identified any kind of distinct predatory or exclusionary abuse of market power that forced consumers into an unwanted change or supracompetitive prices.

1. Apple's "gating off" and "removal" of the old algorithm are not associated anticompetitive conduct.

"[P]roduct improvement by itself does not violate Section 2," even if it "harms competitors as a result." *Allied Orthopedic*, 592 F.3d at 999-1000. A Section 2 claim involving an improvement can survive only if the claim rests on "'some associated conduct which constitutes an anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market.'" *Id.* at 999.

The "associated" conduct on which the asserted liability rests must be separate from the improvement itself. That has been clear since *Foremost*—a case that AliveCor incorrectly suggests supports its argument (OB 30-31). Associated conduct, this Court explained in *Foremost*, can be neither "the product introduction itself" nor any resulting "technological

incompatibilities” that the innovation creates. 703 F.2d at 545. Rather, it must constitute *distinct* anticompetitive conduct—for instance, an “unlawful tying arrangement” that coerces consumers into buying an additional product. *Id.* at 542. Both the product innovation and the consequences of that innovation in themselves are beyond the scope of a Section 2 claim. *Id.* at 542-45; *accord, e.g., Allied Orthopedic*, 592 F.3d at 1000 (product improvement “is necessarily tolerated by the antitrust laws, unless the monopolist abuses or leverages its monopoly power *in some other way*” (cleaned up) (emphasis added)).

AliveCor has not identified “associated” conduct at all. It treats the HRPO and HRNN algorithms as if they were distinct products, such that removal of the former would have nothing to do with the improvement caused by the latter. But the product—i.e., the tool offered to developers who join the Developer Program and access the API—is Workout Mode, and everything AliveCor challenges was an integral component of Apple’s improvement to that product.

AliveCor’s efforts to subdivide the product Apple offered from the improvements to that product are contrary to this Court’s precedent. In *Foremost*, for instance, the relevant product was the film, not the specific

features of the film that made it compatible or not with existing photofinishing services. 703 F.2d at 542-45. In *CalComp*, the products were IBM's CPUs, not the aspects of the CPUs that interacted with competing peripheral devices. 613 F.2d at 743-44. And in *Allied Orthopedic*, the products were Tyco's pulse-oximetry monitors, not the specific technology that made the monitors compatible or not with other companies' sensors. 592 F.3d at 1000-02. Just as the improvements and resulting incompatibilities in those cases were not "associated" conduct, so too here Apple's algorithm update and any resulting harms from the withdrawal of the old algorithm are not "associated" conduct that could support Section 2 liability.

AliveCor insists, however, that Apple had a legal obligation to provide AliveCor with continuing access to HRPO-generated data, notwithstanding (or perhaps in lieu of) Apple's improvement of Workout Mode through the new HRNN algorithm. That argument is misguided as a matter of the facts and the law.

Before and after the algorithm update, Workout Mode has always been designed to report just one set of heartrate data, both for wearers using the Workout App and for developers using the Workout Mode API. 4-SER-872, -881; 8-ER-1915-16, -1924-25. And at no point has Apple

undertaken to change Workout Mode's architecture to provide multiple (and conflicting) streams of data at once.

Changing Workout Mode's architecture to accommodate multiple data streams (as AliveCor's theory presupposes) would have come with costs. Apple's engineers would have had to code the functionality to show two heartrate data sets at once or to give wearers and developers an ability to toggle between sets. 4-SER-881-82; 8-ER-1925. Showing two conflicting sets of data would also require Apple to knowingly provide less-accurate data and would risk confusing wearers and developers; if Apple wanted to mitigate that risk, it would have had to communicate the new API design and develop a way to help users determine which set of data was more accurate at any time. 4-SER-882-83; 8-ER-1922. Plus, changing Workout Mode to run, report, and store data from two algorithms at once would drain the Watch's finite processing and memory resources—particularly if Workout Mode were running constantly in the way AliveCor preferred. 4-SER-854, -883; 17-ER-4471-72; 9-ER-2054.

AliveCor suggests these costs are illusory because, for a time, HRPO remained on watchOS 5 and was used (i) in Workout Mode, for the shorter of a 60-second interval or until HRNN reported its first reading,

7-ER-1499; and (ii) in Apple’s distinct High Heart Rate feature, [REDACTED] [REDACTED] 8-ER-1973-74; 14-ER-3537-38. But AliveCor’s argument neglects undisputed facts in the record. HRPO’s intermittent use for Workout Mode and the High Heart Rate feature has nothing to do with the costs Apple would have had to bear to redesign Workout Mode to report multiple, conflicting sets of heartrate data, or with the further engineering costs and risks of confusion that would follow. *Supra* at 13-14. And although HRPO was “running” in Workout Mode for a time (OB 26), any data it generated were neither stored nor reported outside of those intermittent uses, which resulted in processing and battery savings for the Watch. 4-SER-877; 14-ER-3555. Ultimately, the exact magnitude of these costs is beside the point: they indisputably exist, and Apple had no legal obligation (or economic incentive) to incur them. 4-SER-881-83; 9-ER-2054.

Workout Mode, then, has always featured and continues to feature one stream of reported heartrate data. And that’s the feature Apple improved as of watchOS 5. Initially, Workout Mode’s heartrate-data stream was fed by HRPO. Then Apple devised a way to improve the accuracy of the data in the stream by moving, first primarily and later

exclusively, to HRNN. *Supra* at 14-16. Developers like AliveCor continued to have access to one product (the Workout Mode API), with one of its features (the reported heartrate data) now more accurate because of the new algorithm. That developers were no longer seeing data derived from HRPO was not some “associated” anticompetitive decision distinct from the product improvement—it was the product improvement *itself*.

Faced with that defect, AliveCor seizes on an isolated phrase from *Allied Orthopedic*, contending that the results of product innovation are subject to attack under Section 2 unless they were the “necessary consequence” of the improvement. 592 F.3d at 1002. As AliveCor sees it, so long as a monopolist could have taken some action to help its competitors—here, for instance, by creating a way for developers to have separate, continuous access to the old algorithm distinct from the Workout Mode API—then it cannot claim the protections of the product-improvement doctrine. OB 43-45, 54-55.

AliveCor’s argument goes nowhere as a matter of the undisputed record. Again, the relevant product is the Workout Mode API; the API’s architecture has always provided only one stream of heartrate readings, and AliveCor had full access to that stream both before and after the

algorithm upgrade. All that changed was how Apple translated measurements from its optical sensor into estimated heartrate data reported in Workout Mode, with HRNN providing more accurate and more frequent readings. That AliveCor was seeing data from HRNN rather than HRPO, then, was the “necessary consequence” of the improvement, just as the “incompatibility” between the old sensors and Tyco’s new system was the necessary result of the improvement in *Allied Orthopedic*. 592 F.3d at 1002; *see* 7-ER-1501.

AliveCor is also wrong on the law. The single “necessary consequence” sentence it quotes from *Allied Orthopedic* wasn’t announcing some new, distinct test to govern product-improvement claims. This Court merely noted, as it has explained many times, that any technical “incompatibility” caused by “the product improvement at issue” is not “associated” conduct subject to Section 2 attack—because any other rule would require monopolists to affirmatively restrain their innovation or help competitors survive after the innovation. *Allied Orthopedic*, 592 F.3d at 1002; *accord Foremost*, 703 F.2d at 545; *CalComp*, 613 F.2d at 744. And while AliveCor suggests that the phrase “necessary consequence” imports some sort of least-restrictive-means analysis—i.e.,

asking if a monopolist pursued a product change that upended competitors’ legacy uses to the least extent possible—*Allied Orthopedic* rejected exactly that sort of balancing analysis as both “unwise” and “unadministrable.” 592 F.3d at 1000.

In reality, as the district court recognized, what AliveCor demands is a *different product altogether*: an API that delivers multiple sets of heartrate data at once. 7-ER-1502. But the costs that would have come with that dramatic change (*supra* at 13-14) are not ones Apple had to bear. AliveCor’s argument is the same one this Court rejected in *Allied Orthopedic*, when it deemed irrelevant “that Tyco *could have* made its monitors compatible with the old sensors.” 592 F.3d at 1002 (emphasis added); *see* 7-ER-1502-03.

Endorsing AliveCor’s theory would spell an end to the product-improvement doctrine altogether. After all, countless improvements could be characterized as comprising (i) the introduction of the new-and-improved product *and* (ii) the discontinuation of the old product, and the latter could then be attacked as “associated” anticompetitive conduct. As the district court observed, if that sort of theory were enough to sidestep *Allied Orthopedic*, then the doctrine would be rendered ineffectual, and

businesses would be forced to continue offering every old version of their products along with any improvements, “stym[ieing] the innovation that the antimonopoly laws are intended to promote.” 7-ER-1502.

2. AliveCor has not identified any distinct abuse of market power by Apple that forced consumers to adopt new technology.

AliveCor also argues that it can sue Apple for improving Workout Mode because the algorithm switch “force[d] consumers to adopt Apple’s new technology.” OB 31 (capitalization altered). But again, AliveCor fails to identify any associated anticompetitive conduct by Apple distinct from the product improvement itself—and certainly nothing like the manipulative anticompetitive conduct seen in the few cases AliveCor cites.

In *Foremost*, this Court identified an example of the sort of anticompetitive conduct that could support a theory like AliveCor’s: an “unlawful tying arrangement.” 703 F.2d at 542. In other words, if a company improves one product, the improvement and its effects are not subject to Section 2 liability, but the company cannot separately contrive an anticompetitive arrangement in which consumers are forced to buy a distinct product. *Id.* at 540-42. But there is no such theory before this Court. In opposing summary judgment, AliveCor deemed evidence of tying to be

“unnecessary,” 5-SER-939 n.10, and it has not advanced any tying theory on appeal. All AliveCor identifies are the same sort of consequences of product innovation itself that by definition are not “associated conduct” and thus cannot support a Section 2 claim. *Foremost*, 703 F.2d at 542-45; *see Allied Orthopedic*, 592 F.3d at 1000-02.

This case is therefore nothing like those in which a company “*combines* product withdrawal with some other conduct” that “coerce[s] consumers” to buy related products. *New York ex rel. Schneiderman v. Actavis PLC*, 787 F.3d 638, 653-54 (2d Cir. 2015). In *Schneiderman*, for instance, a pharmaceutical company introduced a new patented version of its Alzheimer’s drug and later withdrew the old version of the drug before the patent on the latter expired. *Id.* at 654. The voluntary withdrawal of the old drug (while its patent still blocked generic alternatives) forced Alzheimer’s patients who had depended on the prior version to switch to the new version. *Id.* at 655. And because the new drug was not “therapeutically equivalent” to the old drug, manufacturers would be unable to offer competitive generic versions of the old drug under state generic-substitution laws even after the latter’s patent expired. *Id.* at 647-48, 655-57. As a result, the defendant pharmaceutical company was able

to charge supracompetitive prices for its new drug, and Alzheimer's patients were left with no viable, cheaper alternative. *Id.* at 655-68.

This case presents none of the same features. In *Schneiderman*, the introduction of the new drug did not necessitate or logically entail withdrawal of the old; indeed, at the outset, both drugs were offered at the same time. 787 F.3d at 647-48. Here, by contrast, adoption of the new, improved algorithm was structurally and logically intertwined with the replacement of the old, less-accurate algorithm. *Supra* at 13-15, 43-48. In *Schneiderman*, moreover, Alzheimer's patients had no choice but to switch to the new drug, and the withdrawal of the old drug combined with state generic-substitution laws made it impracticable for any generics to compete. Here, however, Watch wearers and developers alike can continue to use both Workout Mode and the tachogram data that feeds into Apple's IRN feature, and consumers can also readily access (and developers can offer) other aFib apps on competing wearables. And while in *Schneiderman* the defendant's conduct was calculated to maintain supracompetitive prices, here consumers can benefit from either Workout Mode or IRN free of cost, and can also download or sample any competing feature.

AliveCor’s complaints of a forced switch make no sense even on their own terms. AliveCor suggests that Apple wanted to reap the benefits of its market position by forcing Watch wearers “to adopt Apple’s watchOS heart rhythm analysis app”—i.e., the IRN feature. OB 34. The point of such forced-adoption claims is that the monopolist, through anticompetitive conduct, gets to reap supracompetitive profits. Except, here, Apple has never charged a cent for the IRN feature, so it reaps nothing from wearers’ use of IRN rather than AliveCor’s app. And through the Tachogram API, Apple gives the same data IRN uses to developers, who can easily choose to develop their own aFib apps.

AliveCor’s arguments involving Cardiogram, which had been trying to develop an app to monitor for irregular heart rhythms, are similarly misplaced. Cardiogram’s app would have been based on the same repurposing of Workout Mode as SmartRhythm—i.e., turning a tool for measuring *heartrates* during workouts into a tool to continuously monitor heart *rhythms* for irregularity. *Supra* at 16. AliveCor contends that Apple’s algorithm switch prevented Cardiogram’s entry, but in reality, Apple understood that tachogram data (of the type it ultimately made available to developers through the separate Tachogram API) would provide [REDACTED]

██████████ for that purpose. 13-ER-3165; *see* 13-ER-3322 (recognizing that the Workout Mode heartrate algorithm doesn't provide the ██████████ used for heart-rhythm analysis). In any event, just as Apple had nothing to gain from wearers' using IRN rather than SmartRhythm, so too it had nothing to gain from their using IRN rather than any Cardiogram app. 9-ER-2044-46.

AliveCor's complaints that developers were forced to switch from the Workout Mode API to the Tachogram API (OB 33) falls flat for similar reasons. Apple doesn't benefit if a developer moves from one API to another. Developers like AliveCor also have an array of alternatives: they can and do take advantage of diverse tools offered in numerous other health- and fitness-related wearable devices that can track heartrates, or they can develop their own wearables to join that field. *Supra* at 8; *see* 9-ER-2108, -2110. Indeed, AliveCor itself has launched handheld devices that offer heartrate-monitoring services. 9-ER-2032. And AliveCor doesn't suggest that Apple is using its position in the crowded market for wearable devices to force consumers to buy the Watch. *See Allied Orthopedic*, 592 F.3d at 1002. Ultimately, that many developers have continued to flock to using Apple's tools like the Workout Mode and Tachogram

APIs, *supra* at 15-16; *infra* at 75-76, signals the quality of those tools, not any kind of anticompetitive manipulation.

This case is worlds away from the limited circumstances in which courts have recognized coercive switches in the context of product innovations. Apple's algorithm upgrade was not accompanied by any manipulation of patent exclusivity and generic-substitution laws, illegal tying arrangement, or any other form of distinct anticompetitive conduct, nor did it lead to supracompetitive pricing or competitive constraints. The district court correctly granted summary judgment in Apple's favor on AliveCor's Section 2 claim.

II. AliveCor also cannot establish an anticompetitive refusal to deal.

AliveCor also cannot prove liability under Section 2 for the independent reason that its attempt to avoid the product-improvement doctrine runs headlong into the law governing refusal-to-deal claims. AliveCor contends that the product-improvement doctrine does not bar relief here because Apple removed AliveCor's access to HRPO-derived data. OB 56. But even if AliveCor's theory provided a path around the product-improvement doctrine, it would still constitute a refusal-to-deal claim, meaning AliveCor must prove that Apple terminated a profitable prior

course of dealing involving a product currently marketed to similar consumers in order to capture more profits in the long run by harming competition. AliveCor can neither circumvent the refusal-to-deal framework nor prove a viable claim under its demanding requirements.

A. The conduct AliveCor challenges is a refusal to deal.

AliveCor’s theory is that the district court erred in not applying the rule of reason to Apple’s removal of third-party access to HRPO-generated data. OB 29-30, 39, 56-57. But the antitrust laws don’t automatically apply the rule of reason. “With time and a gathering body of experience,” courts have adapted Section 2 “to particular circumstances, developing considerably more specific rules for common forms of alleged misconduct.” *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1072 (10th Cir. 2013) (Gorsuch, J.). One such specific rule governs refusal-to-deal claims. Even if AliveCor could disaggregate Apple’s refusal to provide data to AliveCor beyond what the Workout Mode API offers to all developers from the broader product improvement, that claim would remain subject to a high standard that AliveCor cannot satisfy.

1. Companies generally have no duty to deal with rivals.

Since the early decades of antitrust law, the Supreme Court has held that the Sherman Act “does not restrict the long recognized right of trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.” *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919). The Court continues to adhere to this “general rule” that “businesses are free to choose the parties with whom they will deal, as well as the prices, terms, and conditions of that dealing.” *Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438, 448 (2009). And the Court has been “very cautious” in recognizing exceptions to the rule that the antitrust laws don’t proscribe a monopolist’s “refusal to cooperate with rivals.” *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004). This Circuit shares that “reluctance to impose a duty to deal.” *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184-85 (9th Cir. 2016).

There are good reasons for that skepticism. A claim that the plaintiff is entitled to its competitor’s resources “is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically

beneficial facilities.” *Trinko*, 540 U.S. at 407-08. Such a claim “also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited.” *Id.* at 408. And a duty to deal, once judicially imposed, may end up “compelling negotiation between competitors” and thereby “facilitate the supreme evil of antitrust: collusion.” *Id.* Since *Trinko*, this Court has reiterated that refusal-to-deal claims can cause those harms, *e.g.*, *Aerotec*, 846 F.3d at 1183, especially when parties are “engaged in the pursuit of technological innovation,” *FTC v. Qualcomm Inc.*, 969 F.3d 974, 997 (9th Cir. 2020).

Accordingly, “a firm’s unilateral refusal to deal with its rivals can give rise to antitrust liability” in only “limited circumstances.” *linkLine*, 555 U.S. at 448. The Supreme Court’s decision in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), is “at or near the outer boundary” of Section 2 liability. *Trinko*, 540 U.S. at 409. In *Aspen Skiing*, the defendant discontinued a profitable joint venture with its only rival ski resort and refused to sell the competitor lift tickets, even at full retail prices. 472 U.S. at 592-94. The Court held that the defendant’s decision to abandon the profitable venture could be explained only by a

desire to “forgo . . . short-run benefits” to “reduc[e] competition . . . over the long run by harming its smaller competitor.” *Id.* at 608.

Since *Aspen Skiing*, this Court has distilled three requirements for duty-to-deal claims: (1) the unilateral termination of “a voluntary and profitable course of dealing”; (2) “the only conceivable rationale or purpose” for that termination “is to sacrifice short-term benefits in order to obtain higher profits in the long run from the exclusion of competition”; and (3) “the refusal to deal involves products that the defendant already sells in the existing market to other similarly situated customers.” *Qualcomm*, 969 F.3d at 993-94 (cleaned up).

A plaintiff claiming a refusal to deal must satisfy each element—and cannot skip straight to the rule of reason. *E.g.*, *Trinko*, 540 U.S. at 409-10; *Aerotec*, 836 F.3d at 1184. In fact, this Court’s decision in *Qualcomm*—which AliveCor cites for its theory that the district court should have applied the rule of reason (OB 30)—rejected a claim under the “general rule that there is no antitrust duty to deal,” *without* balancing anti-competitive and procompetitive effects. 969 F.3d at 993-95.

By jumping straight from product improvement to the rule of reason, AliveCor seeks to evade the “considerably more specific rules” that

govern alleged refusals to deal. *Novell*, 731 F.3d at 1072. But the “same three-part burden-shifting test” doesn’t apply to all supposed “monopolist conduct,” OB 30; when it comes to refusals to deal, *Aspen Skiing* instead supplies the framework.

2. AliveCor cannot avoid the demanding refusal-to-deal standard through semantics.

Even if withdrawal of HRPO constituted associated conduct under *Allied Orthopedic*, AliveCor’s argument would be in substance about Apple’s refusal to help AliveCor by reengineering Workout Mode to give AliveCor special, ongoing access to data from the old algorithm. AliveCor challenges Apple’s decision to “gat[e] off third party access to HRPO-generated data” through the Workout Mode API. OB 41. AliveCor also challenges Apple’s later “discontinuation of HRPO” entirely. *Id.* at 46. And it contends that the antitrust laws forbade Apple to “refus[e] to allow competitors to see its data.” *Id.* at 42. There is nothing subtle about the refusal-to-deal characteristics of those arguments. Their crux is that Apple had a “duty to aid competitors” by continuing to make available data that AliveCor desired for its heart-monitoring feature—the precise claim that the Supreme Court has refused to uphold outside the narrow circumstances of *Aspen Skiing*. *Trinko*, 540 U.S. at 411.

AliveCor denies that it claims Apple has a “duty to help its competitors,” yet insists Apple wasn’t “permitted to withdraw an algorithm previously available to third parties.” OB 61. That is doublespeak. *Aspen Skiing* itself involved withdrawal of ski passes that were available to third parties. 472 U.S. at 593. This Court has recognized that the refusal-to-deal framework applies when plaintiffs claim that an alleged monopolist withheld “parts and technical data.” *Aerotec*, 836 F.3d at 1184. And other circuits have applied *Aspen Skiing* when a monopolist “refused to share its intellectual property with rivals after first promising to do so,” *Novell*, 731 F.3d at 1073, including in cases involving APIs, *e.g.*, *New York v. Meta Platforms, Inc.*, 66 F.4th 288, 305 (D.C. Cir. 2023); *see also Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1358 (Fed. Cir. 1999). The test turns on the conduct—not the label—because “[w]hether one chooses to call a monopolist’s refusal to deal with a rival an act or omission, interference or withdrawal of assistance, the substance is the same.” *Novell*, 731 F.3d at 1079. Any other rule would supply an improper “escape route” to parties “[u]nable to travel the hard road of refusal to deal doctrine.” *Id.* at 1078.

AliveCor also cannot evade the refusal-to-deal standard by creating a new, amorphous category of anticompetitive acts called “product design

change.” OB 30. In *linkLine*, the plaintiff advanced a freewheeling “price-squeeze” theory that would have imposed liability whenever a monopolist in an upstream market lowered prices to exclude downstream competitors, even though there was “no predatory pricing” and “no duty to deal” under settled law. 555 U.S. at 449. The Court rejected that attempt by the plaintiff to “alchemize” a meritless predatory-pricing claim and a meritless refusal-to-deal claim into “a new form of antitrust liability never before recognized by th[e] Court.” *Id.* at 457. And this Court and others have since rejected attempts to create “an additional exception, beyond the *Aspen Skiing* exception,” from the general rule against a duty to deal. *Qualcomm*, 969 F.3d at 997; see, e.g., *In re EpiPen (Epinephrine Injection, USP) Mktg., Sales Pracs. & Antitrust Litig.*, 44 F.4th 959, 982 (10th Cir. 2022). Put simply, AliveCor cannot transform “[t]wo wrong claims” under *Allied Orthopedic* and *Aspen Skiing* into “one that is right.” *linkLine*, 555 U.S. at 457.

AliveCor’s accusations that Apple harbored an anticompetitive intent likewise don’t provide an escape route from *Aspen Skiing*. OB 42-43, 58-59. In *Aerotec*, this Court held that “intent to foreclose competition” is “not sufficient alone to establish liability” and that “even an act

of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws.” 836 F.3d at 1184 (cleaned up). AliveCor’s accusations of “anticompetitive aspirations,” *id.*, are not only factually unsupported, *supra* at 38-40, but also legally inadequate to avoid summary judgment.

B. Apple had no duty to provide AliveCor continued access to HRPO data.

This case does not involve those “rare circumstances” that justify the imposition of a duty to deal. *Qualcomm*, 969 F.3d at 994. AliveCor’s evidence does not create a genuine dispute as to any of the three refusal-to-deal elements this Court recently reiterated in *Qualcomm*. *Id.* at 993-94. AliveCor confirmed as much below, effectively acknowledging that it could not satisfy all three of the elements of the refusal-to-deal standard. 2-ER-175.

First, AliveCor has presented no evidence that Apple’s removal of access to HRPO data “unilaterally terminate[d] a voluntary and profitable course of dealing.” *Qualcomm*, 969 F.3d at 993 (cleaned up). Apple didn’t terminate any profitable relationship with AliveCor. AliveCor retains its \$99 annual membership in the Developer Program. 9-ER-2051-52.

Because Apple did not terminate its relationship with AliveCor, the refusal-to-deal claim does not get over even the first hurdle of *Aspen Skiing*.

Apple improved the heartrate data made available through the Workout Mode API, but that change was not a termination of a course of dealing that Section 2 could prohibit. In *Aerotec*, for example, the plaintiff challenged the defendant’s “‘withholding of parts and technical data’” that “‘previously had been provided as a matter of course.’” 836 F.3d at 1177, 1184. This Court held that those changes in the terms of dealing could “hardly be characterized as so onerous as to be tantamount to the conduct in *Aspen Skiing*.” *Id.* at 1184. Here, too, AliveCor’s dislike of the updated Workout Mode API (to which AliveCor continues to have full access) doesn’t show that Apple terminated a course of dealing at all, let alone a profitable one.

Second, AliveCor cannot prove that Apple sought “‘to sacrifice short-term benefits in order to obtain higher profits in the long run from the exclusion of competition.’” *Qualcomm*, 969 F.3d at 993-94.

There was no short-term profit sacrifice. Apple responded to consumer demand for accurate fitness-tracking products when launching its software update with the improved Workout Mode. 13-ER-3402-07.

[REDACTED].

13-ER-3399-400, -3414-15. Apple continued to receive \$99 annually from AliveCor in Developer Program fees. 9-ER-2051-52. And Apple lost no profits from AliveCor's removal of its SmartRhythm feature, because AliveCor paid no commissions to Apple for the sale of premium subscriptions that gave AliveCor customers access to SmartRhythm. 9-ER-2051.

There also was no attempt to recoup higher profits from excluding competition in the long run. AliveCor suggests the algorithm change was a scheme to profit from Apple's IRN feature. OB 16-17. Yet AliveCor doesn't dispute that Apple has always offered IRN to Watch wearers for free. Nor has AliveCor pointed to any other evidence that Apple profited a dime from AliveCor's discontinuation of SmartRhythm.

AliveCor's assertions that Apple believed the launch of IRN, coupled with the removal of third-party access to HRPO data, could be "hugely profitable" (OB 7 (capitalization altered)) could not sustain a refusal-to-deal claim at any rate. Even if Apple had intended to monetize its IRN feature or any other data, that would show only that Apple "cho[se] the path that was 'far more lucrative,' both in the short term *and* the long term, regardless of any impacts on competition." *Qualcomm*,

969 F.3d at 994. An antitrust plaintiff can’t pursue a duty-to-deal theory under those circumstances.

Third, AliveCor also lacks evidence capable of proving that Apple’s “refusal to deal involves products that [Apple] already sells in the existing market to other similarly situated customers.” *Qualcomm*, 969 F.3d at 994. Apple offers its Workout Mode API—now upgraded with more accurate heartrate data from HRNN—to all developers. *Supra* at 14-16. Apple also provides developers with the Tachogram API, which includes access to the same beat-by-beat heart rhythm data Apple uses for its IRN feature. 14-ER-3693-94; 15-ER-3734-35; 21-ER-5527. Because AliveCor remains a licensee in the Developer Program, it has the same access to APIs as all other developers and the same ability to offer apps in the App Store. 9-ER-2051-52. And although Apple used HRPO data internally, for a limited time and on an intermittent basis, in connection with its High Heart Rate feature (*supra* at 14-15, 46), Apple didn’t make that data available to third-party developers (and AliveCor does not contend that the High Heart Rate feature is even in the relevant market). So what AliveCor wants is something that Apple does not “sell[] in the existing market,” *Qualcomm*, 969 F.3d at 994, to anyone: either the old,

unimproved version of the Workout Mode API that provided a stream of heartrate data using only the defunct HRPO algorithm, or a new API that reports multiple sources of heartrate data at once.

Section 2 recognizes potential refusal-to-deal liability only when a monopolist has withheld from competitors “a product that it already sold at retail” to the general public (as in *Aspen Skiing*) or denied “the same service” to competitors that it “was already in the business of providing” to other customers (as in *Otter Tail Power Co. v. United States*, 410 U.S. 366, 370-71 (1973)). *Trinko*, 540 U.S. at 410; accord *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1133 (9th Cir. 2004). But there is no duty to deal where “the services allegedly withheld are not otherwise marketed or available to the public.” *Trinko*, 540 U.S. at 410. Put plainly, the antitrust laws don’t demand special treatment for competitors.

Special treatment is exactly what AliveCor seeks. It doesn’t dispute that Apple’s decision to modify the Workout Mode API was taken “neutrally with respect to *all* competing [developers].” *Qualcomm*, 969 F.3d at 995. Still, AliveCor wants continuing, indefinite access to HRPO data that “exist[ed] only deep within the bowels” of the Apple Watch—even though such access was not “otherwise marketed or available” to any

other developers. *Trinko*, 540 U.S. at 410. Even if AliveCor could identify associated conduct under *Allied Orthopedic*, its assertion that Apple had to code special access to HRPO data and maintain the algorithm indefinitely is “not a recognized antitrust claim under th[e] Court’s existing refusal-to-deal precedents.” *Id.*

Recognizing that Apple did not make HRPO data available to any parties, AliveCor tried to pivot below to the “essential facilities” doctrine—a “variation on a refusal to deal claim” in which a monopolist has exclusive control over “an input that is deemed essential, or critical, to competition.” *Aerotec*, 836 F.3d at 1184. “Although the Supreme Court has never recognized the doctrine,” this Court has applied it—but also has recognized that the doctrine, if applied broadly, would implicate “the same concerns as mandating dealing with a competitor” under the traditional refusal-to-deal test. *Id.* at 1184-85 (citing *Trinko*, 540 U.S. at 410-11).

In opposing Apple’s motion to dismiss, however, AliveCor expressly disclaimed any “essential facilities claim or liability theory.” 1-SER-157 n.2. By intentionally waiving any such claim, AliveCor could not revive the theory in opposing summary judgment and likewise cannot resurrect it on appeal. *Crowley v. Epicept Corp.*, 883 F.3d 739, 748 (9th Cir. 2018).

The essential-facilities doctrine could not help AliveCor anyway. For one thing, Apple was not a “monopolist in control of an essential facility”—that is, developer tools that can generate heartrate data. *Aerotec*, 836 F.3d at 1185. AliveCor’s then-Chief Technology Officer conceded that AliveCor could “tak[e] advantage of heart rate data offered by an API on a different third-party product” out of the “thousand watches that say they can collect heart rate.” 6-SER-975, -1016, -1208-09. Apple’s lack of monopoly power over the supposed facility (heartrate data) forecloses any claim that heartrate data is “otherwise unavailable.” *Aerotec*, 836 F.3d at 1185. For another, AliveCor remains a licensee with access to heartrate and tachogram data through the Workout Mode and Tachogram APIs. 4-SER-872, -878. AliveCor may deem those alternatives “not suited” for its specialized purposes. *Flip Side Prods., Inc. v. Jam Prods., Ltd.*, 843 F.2d 1024, 1033 (7th Cir. 1988). But the essential-facilities doctrine does not require companies to maintain special inputs for competitors.

* * *

However labeled, AliveCor’s plea for the courts to prevent Apple from “withdraw[ing] an algorithm previously available to third parties,” OB 61, defies core antitrust principles. A duty to maintain the HRPO

algorithm would diminish both Apple’s incentives to develop algorithms geared toward broader purposes and AliveCor’s competitive drive to adapt to the new API, shift to a competing device, or produce a device of its own. *See Trinko*, 540 U.S. at 408. It would allow AliveCor, as a developer of an AFib-monitoring feature used by at most around 13,000 people, to object to changes that make the Apple Watch better for the exercise functions used by [REDACTED] wearers, even after consumer demand soared for Apple Watches with the upgraded Workout Mode. 9-ER-2089, -2132. And the asserted duty would have the district court set the terms and duration of AliveCor’s compelled access to HRPO data—a task less suited to courts than to “‘central planners,’” a role to which judges “should never aspire.” *NCAA v. Alston*, 594 U.S. 69, 103 (2021); *accord Aerotec*, 836 F.3d at 1183.

The district court recognized these dangers in granting summary judgment, unchallenged on appeal, for Apple on AliveCor’s UCL claim. As the court explained, there would be “no practical end to an injunction to keep an out-of-use algorithm in Workout Mode.” 9-ER-1504. And the court would be forced “to analyze, indefinitely, the quality of algorithms that Apple develops for use by each individual third-party developer in

order to ensure that the quality never degrades for any purpose.” *Id.* The district court correctly rejected “AliveCor’s invitation to micromanage the algorithms Apple maintains on watchOS by ordering Apple to modify its Workout Mode API to reintegrate HRPO and provide third-party developer access to HRPO values.” *Id.* This Court should reject AliveCor’s same invitation under Section 2.

III. AliveCor has no evidence capable of proving antitrust injury.

Affirmance is also warranted for a third independent reason: AliveCor can’t demonstrate antitrust injury, which requires evidence of harm to competition in the allegedly restrained market. Although the district court concluded (without specifying its reasons) that fact issues precluded summary judgment on antitrust injury, 7-ER-1497, this Court may affirm on any ground supported by the record, even if it departs from the district court’s reasoning in doing so. *Opara v. Yellen*, 57 F.4th 709, 721 (9th Cir. 2023). And here, the record makes clear that AliveCor hasn’t addressed the correct market and can’t show injury to competition in its preferred market in any event.

Antitrust injury is a necessary element of any antitrust claim. It demands proof of “injury of the type the antitrust laws were intended to

prevent and that flows from that which makes defendants’ acts unlawful.” *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977). And it prevents plaintiffs from recovering for “losses stemming from continued competition”—an outcome that would be “inimical to the antitrust laws.” *Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 334 (1990) (cleaned up). To establish antitrust injury, the plaintiff must demonstrate injury to “competition in the market as a whole, not merely injury to itself as a competitor.” *Gorlick Distrib. Ctrs., LLC v. Car Sound Exhaust Sys., Inc.*, 723 F.3d 1019, 1024-25 (9th Cir. 2013).

Any asserted antitrust injury must take place “in the market where competition is allegedly being restrained.” *Qualcomm*, 969 F.3d at 992 (cleaned up); accord *Ass’n of Wash. Pub. Hosp. Dists. v. Philip Morris Inc.*, 241 F.3d 696, 705 (9th Cir. 2001). That rule flows from the bedrock principle that an injury is not cognizable if it is “derivative and indirect or secondary, consequential, or remote.” *City of Oakland v. Oakland Raiders*, 20 F.4th 441, 458 (9th Cir. 2021) (cleaned up).

AliveCor’s first major problem on the antitrust-injury front is that it never defined the market in which Apple’s assertedly anticompetitive conduct occurred. In antitrust law, “a relevant market defines ‘the field

in which meaningful competition is said to exist.’” *Coronavirus Rep. v. Apple Inc.*, 85 F.4th 948, 955 (9th Cir. 2023). A market is the “‘arena within which significant substitution in consumption or production occurs,’” as adjusted to “‘reflect[] commercial realities.’” *Ohio v. Am. Express Co.*, 585 U.S. 529, 543-44 (2018) (cleaned up). Defining each relevant market is “essential to any antitrust case” because, without knowing the boundaries of the market, the court can’t appropriately determine market power, anticompetitive abuses of that power, or any resulting injuries. *Coronavirus Rep.*, 85 F.4th at 955.

Here, AliveCor challenges Apple’s decision to withdraw developers’ access to HRPO-generated data, and thus claims anticompetitive conduct in a market in which developers are customers of Apple’s platform with access to Apple’s “development tools”—yet AliveCor’s expert conceded that he neither defined nor analyzed such a market. 3-SER-498-500; *accord*, e.g., 4-SER-721-22 (expert later admitting he had not defined “new or additional relevant markets” in his rebuttal report). Because AliveCor failed to even define the challenged conduct market, its Section 2 claim cannot get off the ground.

The problems for AliveCor don't end there. As the district court recognized, *whatever* market in which Apple's challenged conduct occurred is distinct from "the market in which the [asserted] harm to competition occurred." 7-ER-1489. AliveCor tries to show injury in the consumer-facing market for heart-rhythm-analysis apps. OB 20-22; *see* 5-SER-945-47. But its case rests instead on Apple's withdrawal of HRPO-generated data in connection with tools that Apple offers to third-party app developers as customers of the platform. *E.g.*, OB 41, 46.

That mismatch alone dooms AliveCor's ability to show antitrust injury. *Qualcomm*, 969 F.3d at 992; *see also Dreamstime.com, LLC v. Google LLC*, 54 F.4th 1130, 1138-41 (9th Cir. 2022) (antitrust plaintiff could not rely on alleged anticompetitive conduct beyond the market it defined). No matter how the market encompassing Apple's challenged update to Workout Mode API is defined, it's inarguably distinct from the market for heart-rhythm-analysis (or "HRA") apps, where AliveCor suggests competition was injured. *See* OB 18.

Even if the Court focuses only on the HRA app market, affirmance is still warranted because AliveCor has no "proof of actual detrimental effects

on competition, such as reduced output, increased prices, or decreased quality,” in that market. *Am. Express*, 585 U.S. at 542 (cleaned up).

To begin, there has been no decline, much less one “‘of significant magnitude,’” in the number of competitors in the market AliveCor describes. *Adaptive Power*, 141 F.3d at 951-52. The number of different HRA apps has remained the same. Under AliveCor’s definition, there was only one such feature offered to Apple Watch users (AliveCor’s Smart-Rhythm) before Apple upgraded Workout Mode. OB 21. Now there is still one: Apple’s IRN feature. OB 21, 34. Without any decline, AliveCor can show “no injury to competition.” *Adaptive Power*, 141 F.3d at 951-52.

Moreover, from the vantage point of the consumers using HRA apps, output has actually grown, and by two orders of magnitude. In just the first quarter after Apple introduced IRN, Watch users with “access to HRA functionality” soared “from 13,334 to [REDACTED].” 9-ER-2128. A few years later, “[REDACTED] consumers” had access to HRA functionality than before Apple’s upgrade. *Id.* (emphasis added). Where “output is expanding,” there is no basis to find “competitive injury,” “absent some evidence that tends to prove that output was restricted.”

Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 237 (1993).

Competitors also remain free to enter the alleged market for heart-rhythm-analysis apps. AliveCor complains that its gerrymandered market is cornered by IRN, but it concedes that Apple gives developers access to precisely the same tachogram data used by IRN. OB 33, 35-36; *see* 13-ER-3381-82; *see also* 14-ER-3577-78. None of this suggests any damage *to competition* in any market.

Prices are also down. To use SmartRhythm, users had to pay \$99 annually for a premium subscription. 9-ER-2125; 7-SER-1384-86. By contrast, IRN is free. 9-ER-2125. As AliveCor's expert never contested, Apple has neither charged supracompetitive prices nor gained supracompetitive profits in the supposed market for heart-rhythm-analysis apps. 3-SER-454 (admitting he never "developed an opinion about whether [Apple's] pricing is supracompetitive" and that he hadn't "made that analysis" when asked about profits).

Nor is there any evidence that quality has dropped. If anything, the evidence indicates that consumers prefer Apple's free feature to AliveCor's pricey one. 9-ER-2135-36, -2139-40. At most around 13,000

users subscribed to SmartRhythm at its zenith. 9-ER-2128, -2132. But

alone, while SmartRhythm was on the market. 9-ER-2130. And by the time AliveCor withdrew SmartRhythm, [REDACTED] users had enabled IRN. *Id.* IRN’s popularity has continued to surge. Now, [REDACTED] [REDACTED] users have enabled it. 9-ER-2125.

AliveCor contends that the switch from HRPO to HRNN caused consumers to “los[e] access to higher quality, continuous [medical] monitoring.” OB 22. But as AliveCor conceded below, IRN and SmartRhythm serve different groups. SmartRhythm “focused on higher-risk populations,” while IRN is “aimed at a wide variety of demographic groups” and thus “prioritized . . . reduc[ing] false positives.” 5-SER-947-48. That is a difference in *focus*, not a difference in quality. And even if SmartRhythm were better suited for a small subset of high-risk groups, that would not make it higher quality than an app better suited for everyone else.

AliveCor also complains that IRN is not FDA-approved for those with AFib. OB 2, 13, 22. That is not even half the story: the FDA has approved IRN for detecting irregular heart rhythms that may indicate AFib in the general population, though not for those with a history of

AFib. 9-ER-2135; 14-ER-3540. And AliveCor neglects to mention that the FDA has never approved SmartRhythm for *any* purpose. 9-ER-2135 n.496.

AliveCor’s bid for antitrust injury ultimately rests on the theory that Apple Watch users lost access to SmartRhythm when AliveCor withdrew it. But even where conduct “has the effect of reducing consumers’ choices,” that doesn’t mean that competition is injured; the loss of some competing products is “fully consistent with a free, competitive market.” *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1202 (9th Cir. 2012). And claims about “consumers’ freedom of choice” are insufficient for antitrust liability. *Hirsh v. Martindale-Hubbell, Inc.*, 674 F.2d 1343, 1349 n.19 (9th Cir. 1982). AliveCor had to—but didn’t—come forward with evidence that Apple “harm[ed] consumer welfare,” considering “competitive price and quality.” *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1433 (9th Cir. 1995). At the end of the day, Apple Watch users now have an AFib feature that works better for more people and costs less. AliveCor thus can’t show antitrust injury under any circumstances, which is an independent reason to affirm.

CONCLUSION

This Court should affirm the judgment.

Dated: October 15, 2024

Respectfully submitted,

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**UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

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Under Circuit Rule 27-13(c) and 25-5(f)(2), I hereby certify that on October 15, 2024, I caused the foregoing brief, which was filed under seal, to be served by mail and email on:

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